

1 **THERMAL SYNTHESIS APPARATUS AND PROCESS**

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3 **CONTRACTUAL ORIGIN OF THE INVENTION**

4 This invention was made with United States Government support under Contract  
5 No. DE-AC07-99ID13727 awarded by the United States Department of Energy. The  
6 United States Government has certain rights in the invention.  
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8 **RELATED APPLICATION**

9 This application claims priority from United States provisional application S/N  
10 60/181,488, filed on February 10, 2000, the disclosure of which is herein incorporated by  
11 reference. This application is also a continuation-in-part of U.S. Patent Application  
12 Serial No. 09/320,784, <sup>now US Patent 6,187,226</sup> filed May 27, 1999, which is a continuation-in-part of U.S. Patent  
13 Application Serial No. 09/076,922, now U.S. Patent No. 5,935,293, filed May 12, 1998,  
14 which is a continuation-in-part of U.S. Patent Application Serial No. 08/404,395, now  
15 U.S. Patent No. 5,749,937, filed March 14, 1995, the disclosures of which are  
16 incorporated herein by reference.  
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18 **BACKGROUND OF THE INVENTION**

19 **Field of the Invention**

20 The present invention relates generally to a thermal synthesis process. In  
21 particular, the present invention relates to methods and apparatus for thermal conversion